REVISION OF THE AUSTRALIAN SPECIES OF THE GENUS *ANTHOBOSCA* (FAMILY SCOLIIDÆ) WITH DESCRIPTIONS OF NEW SPECIES.

[*Hymenoptera.*]

By Rowland E. Turner, F.E.S.

Genus Anthobosca Guér.

Anthobosca Guér., Voy. Coq. ii. 2, p.214, 1830 (1839).

Cosila Guér., l.c. p.249; Sichel, Sauss. et Sich., Spec. Gen. Scol. p.259, 1864; Sauss., Grandidier, Hist. Madagascar, xx. P.2, p.233, 1892.

Myzine (partim) Sm., Cat. Hym. B.M. iii. 69, 1855; Dalla Torre, Cat. Hym. viii. 1897.

Dimorphoptera Sm., Trans. Ent. Soc. Lond. 1868, p.238.

By careful comparison with exotic species in the British Museum Collection, I have convinced myself that the insects classed in the genus *Anthobosca* are the male sex of the insects usually known in Australia as *Dimorphoptera* Sm. Smith himself described a single male as belonging to his genus, which is undoubtedly an *Anthobosca*; but did not compare it in any way with other males, which have hitherto been classed with the *Thynnidæ*. Although certainly forming a link between the *Scoliidæ* and *Thynnidæ*, the structure of the thorax in the female and the presence of wings will not allow of retention in the *Thynnidæ*. The genus must, therefore, be placed in the *Scoliidæ*, next to *Myzine*.

The male sex is well described by Guérin, and may be distinguished by the short, straight and stout antennæ, the unarmed hypopygium and the narrowness of the second cubital cell on the radial nervure; in some species the cell is almost triangular. The neuration extends to the outer margin as in *Thynnus*. The mandibles are bidentate.

In both sexes the maxillary palpi are six-jointed, the joints usually subequal, and the labial palpi four-jointed.

In the female the shape of the second cubital cell is similar to that of the male, but the neuration does not quite reach the outer margin. The mandibles are strong and rather blunt, not bidentate. The epipygium is large and broad, usually pubescent.

In both sexes the clypeus is very short, transverse. The second and third cubital cells each receive a recurrent nervure in most of the species, but in *A. crassicornis* Sm.(♂) and *A. clypeata* Sm.(♀) both recurrent nervures are received by the second cubital cell.

The genus may be distinguished from the rest of the *Scoliidæ* by the first abdominal segment, which is not strangulated in either sex. It has a wide range over the Southern Hemisphere, occurring in S. America, S. Africa, and Madagascar; but the species seem more numerous in Australia than elsewhere.

Key to the Species of Anthobosca.

♂♂. i. Second and third cubital cells each receiving a recurrent nervure.

A. First abdominal segment slender and elongate.

a. Black; thorax and abdomen marked with yellow. Length 14 mm. *A. australasiæ* Guér.

B. First abdominal segment not slender or elongate.

a. Wings nigro-violaceous.

a^2. Wholly black. Length 17 mm. *A. nigripennis* Sm.

b. Wings hyaline.

a^2. Wholly black.

a^3. Median segment rounded, finely reticulate. *A. nigra* Sm.

b^3. Median segment quadrate, rugose. *A. aethiops* Sm.

b^2. Black; with ferruginous legs.

a^3. Wholly black, except the legs. Length 15 mm. *A. varipes* Sm.

b^3. Posterior margin of the pronotum and the postscutellum yellow. Length 7 mm. *A. torresensis*, n.sp.

c^2. Black; the legs black.

a^3. Posterior margin of the pronotum, the postscutellum and a spot on each side of the epipygium yellowish-white. Length 12 mm. *A. longipalpa*, n.sp.

b^3. Posterior margin of the pronotum pale yellow. Length 7 mm. *A. frenchi*, n.sp.

ii. Second cubital cell receiving both recurrent nervures.

a. Second and third abdominal segments and legs dull ferruginous. Length 11 mm. *A. crassicornis* Sm.

♀ ♀. i. Second and third cubital cells each receiving a recurrent nervure.

A. Wings nigro-violaceous.

a. Wholly black.

a^2. With long black pubescence on the sides of the abdomen. Length 29 mm. *A. australis* Sichel.

b^2. With thin grey pubescence on the sides of the abdomen. Length 18 mm. *A. morosa* Sm.

b. Black; the flagellum orange. Length 11 mm. *A. flavicornis* Sauss.

c. Black; a yellow spot on each side of the third abdominal segment. Length 21 mm. *A. signata* Sm.

d. Black; the abdominal segments margined with coarse, short, white pubescence. Length 14 mm. *A. albopilosa*, n.sp.

B. Wings hyaline.

a. Wings clouded at apex.

a^2. Wholly black, front punctured. Length 15 mm. *A. anthracina* Sm.

b. Wings not clouded at apex.

a^2. Entirely black.

a^3. Front punctured. Length 11 mm. *A. unicolor* Sm.

b^3. Front smooth and shining. Length 7 mm. *A. lævifrons* Sm.

c. Wings tinged with fuscous.

a^2. Legs ferruginous. Length 11 mm. *A. cognata* Sm.

d. Wings tinged with yellow, shorter than the abdomen.

a^2. Rufo-testaceous; head, mesothorax and three apical abdominal segments black. Length 17 mm. *A. fastuosa* Sm.

ii. Second cubital cell receiving both recurrent nervures.

a. Black; second, third and fourth abdominal segments rufo-testaceous, except the apical margin. *A. clypeata* Sm.

1. Anthobosca australasiæ Guérin.

A. australasiæ Guérin, Voy. Coq. Zool. ii. 2, p.237, T.8, f.8, 1830 (1839)[♂].

A. crabroniformis Sm., Cat. Hym. B.M. vii. p.59, n.4, 1859(♂).

Thynnus cathreinii D.T., Cat. Hym. viii. 103, 1897(♂).

Hab.—Sydney (G. A. Waterhouse) Richmond River, N. S. W. (Froggatt).

2. A. NIGRIPENNIS Sm.

Dimorphoptera nigripennis Sm., Trans. Ent. Soc. Lond. 1868, p.239(♂).

Myzine nigripennis D.T., Cat. Hym. viii. 125, 1897(♂).

Hab.—Australia.

3. A. NIGRA Sm.

A. nigra Sm., Cat. Hym. B.M. vii. 59, n.2, 1859(♂).

Thynnus reischii D.T., Cat. Hym. viii. 114, 1897(♂).

This species is almost entirely black, the anterior tibiæ are fuscous and the spines of the tibiæ white. Head finely punctured, thorax and abdomen finely shagreened.

Hab.—Woodford, Blue Mtns., N. S. W. (G. A. Waterhouse); Victoria (French).

4. A. AETHIOPS Sm.

A. aethiops Sm., Descr. n.sp. Hym. p.175, n.3, 1879(♂)

Thynnus stolzii D.T., Cat. Hym. viii. 116, 1897(♂).

The median segment is short, quadrate and transversely rugulose; the scutellum is truncate at the apex.

Hab.—Champion Bay, W.A.

5. A. LONGIPALPA, n.sp.

♂. Clypeus short, transverse, very slightly emarginate at the apex. Head and thorax finely shagreened; median segment very finely shagreened, shining at the apex, with a faint depressed mark on the disc near the centre. Abdomen very finely shagreened, a fine, short median sulca from the base of the first segment; the apical segment narrowly truncate at the apex. The three apical joints of the maxillary palpi are rather long, the apical one filiform and of a testaceous colour.

Black, a narrow line on the posterior margin of the pronotum, a transverse line on the postscutellum, a mark at the base of the posterior tibiæ and the spines of the tibiæ, yellowish-white; a spot on each side of the epipygium testaceous-yellow. The anterior tibiæ ferruginous, the anterior tarsi and the intermediate

and posterior tibiæ fuscous. Wings hyaline, slightly iridescent, nervures black. The second cubital cell longer along the radial nervure than in most of the genus. Length 12 mm.

Hab.—Cairns, Q.(Turner).

6. A. FRENCHI, n.sp.

♂. Head very finely punctured, the three apical joints of the maxillary palpi rather longer than the others and of a pale yellow colour. Thorax and abdomen finely shagreened. The scutellum narrowly rounded at the apex.

Black; the mandibles pale yellow, ferruginous at the apex; the posterior margin of the pronotum, the tegulæ and a spot at the base of the tibiæ pale yellow; the anterior tibiæ ferruginous, the anterior tarsi fuscous. Wings hyaline, iridescent. Length 7-8 mm.

Hab.—Victoria(French).

Nearly allied to *A. nigra* in general form, but the thorax is more slender.

7. A. VARIPES Sm.

A. varipes Sm., Cat. Hym. B.M. vii. p.59, n.3, 1859(♂).

Thynnus fischeri D.T., Cat. Hym. viii. 106, 1897.

The scutellum is subtriangular, narrowly rounded at the apex, with a delicate carina from the base nearly reaching the apex.

Hab.—Lower Plenty, Vic.; Victoria (French).

8. A. TORRESENSIS, n.sp.

♂. Head sparsely punctured, almost smooth on the vertex, the apical joints of the maxillary palpi not elongate. Pronotum smooth; the mesothorax, median segment and abdomen very finely shagreened. Scutellum broadly rounded at the apex.

Black; mandibles pale yellow, ferruginous at the apex; scape of the antennæ ferruginous beneath; a broad band on the posterior margin of the pronotum, the tegulæ, a spot on the postscutellum, a spot on each side near the apex of the median segment and the outside of all the tibiæ, pale yellow; legs light

ferruginous, coxæ and trochanters black. Wings hyaline, iridescent, nervures fuscous. The second cubital cell is very narrow along the radial nervures, subtriangular. Length 7-8 mm.

Hab.—Cape York, Q.(April and May; Turner).

9. A. CRASSICORNIS Sm.

Tachypterus crassicornis Sm., Cat. Hym. B.M. vii. 64, n.3, 1859(♂).

The second recurrent nervure is received by the second cubital cell, close to the apex. The second cubital cell is much longer along the radial nervure than in other species of the genus.

Hab.—Australia.

10. A. AUSTRALIS Sichel.

Cosila australis Sichel, Sauss. et Sich., Spec. Gen. Scol. p.261, 1864(♀).

Dimorphoptera scoliiformis Sm., Trans. Ent. Soc. Lond. 1868, 238(♀).

Myzine scoliiformis D.T., Cat. Hym. viii. 126, 1897(♀).

Hab.—Moreton Bay (Smith).

11. A. MOROSA Sm.

Dimorphoptera morosa Sm., Trans. Ent. Soc. Lond. 1868, p.239(♀).

Myzine morosa D.T., Cat. Hym. viii. 125, 1897(♀).

Hab.—Australia; Melbourne(?) (Smith).

12. A. SIGNATA Sm.

Myzine signata Sm., Cat. Hym. B.M. iii. 75, n.31, 1855(♀).

Cosila biguttata Sichel, Sauss. et Sich., Spec. Gen. Scol. p.262, n.3(♀).

Dimorphoptera signata Sm., Trans. Ent. Soc. Lond. 1868, p.238(♀).

Hab.—Sydney, N.S.W.(G. A. Waterhouse); Cairns, Q.(Turner).

13. A. FLAVICORNIS Sauss.

Cosila flavicornis Sauss., Grandidier, Hist. Madagascar, xx. P.2, p.233, 1892[♀](nec *Myzine flavicornis* Sm., 1879).

♀. Front coarsely, vertex sparsely punctured, a short, faint, longitudinal sulca from below the anterior ocellus. Pronotum

very finely and closely punctured anteriorly, more coarsely and sparsely posteriorly, the anterior margin strongly depressed. Mesothorax and scutellum sparsely punctured; median segment opaque, reticulate, almost vertically truncate posteriorly. Abdomen rather sparsely punctured, first segment broad, truncate at the base.

Shining black, with grey pubescence; the flagellum of the antennæ bright orange. Wings fusco-hyaline with faint violet reflections. The second cubital cell is much produced towards the base along the cubital nervure, and is very short on the radial nervure. Length 11 mm.

Hab.—Victoria(French).

14. A. ALBOPILOSA, n.sp.

♀. Head strongly punctured, with white pubescence on the posterior margin. Thorax strongly punctured, most closely on the anterior portion of the pronotum, the pronotum covered with long, thin, black pubescence. Median segment opaque, more finely punctured, obliquely truncate posteriorly. Abdomen densely and rather finely punctured, the apical margins of the segments above and beneath with a fringe of short, broad, scale-like hairs of a silver-white colour, the sides of the segments with long black pubescence. The fifth segment is without the white marginal fringe, and is clothed with long black pubescence. The pygidium is broadly rounded at the apex, the apical portion bare and very finely punctured.

Entirely black, the pygidium fuscous at the apex. Wings fuscous, with very faint violet reflections at the base. The second cubital cell is rather longer along the radial nervure and less produced towards the base along the cubital nervure than in *A. anthracina* Sm. Length 14 mm.

Hab.—Queensland. Type in B.M., ex Coll. Smith.

15. A. ANTHRACINA Sm.

Myzine anthracina Sm., Cat. Hym. B.M. iii. 71, 1855(♀); D.T., Cat. Hym. viii. 121, 1897 (♀).

Dimorphoptera anthracina Sm., Trans. Ent. Soc. Lond. 1868, p.238(♀).

Myzine sabulosa Sm., Cat. Hym. B.M. iii. p.76, 1855(♀); D.T., Cat. Hym. viii. 126, 1897(♀).

Dimorphoptera sabulosa Sm., Trans. Ent. Soc. Lond. 1868, p.238(♀).

Cosila fasciculata Sichel, Sauss. et Sich., Spec. Gen. Scol. p.263, 1864(♀).

Hab.—Sydney.

Cosila inornata Sauss., Grandidier, Hist. Madagascar, xx. 233, 1892, is probably another synonym.

16. A. UNICOLOR Sm.

Myzine unicolor Sm., Cat. Hym. B.M. iii. 75, 1855(♀).

Dimorphoptera unicolor Sm., Trans.Ent.Soc.Lond.1868,238(♀).

Cosila minuta Sauss., Grandidier, Hist. Madagascar, xx. 233, 1892(♀).

Hab.—S. Australia(Saussure).

17. A. LÆVIFRONS Sm.

Dimorphoptera lævifrons Sm., Descr. n.sp. Hym. p.188, 1879(♀).

Myzine levifrons D.T., Cat. Hym. viii. 124, 1897(♀).

Hab.—Victoria (French); South Australia (Smith).

18. A. COGNATA Sm.

Dimorphoptera cognata Sm., Descr. n.sp. Hym. 188, 1879(♀).

Myzine cognata D.T., Cat. Hym. viii. 122, 1897(♀).

Hab.—Swan River, W.A.(Smith).

19. A. FASTUOSA Sm.

Dimorphoptera fastuosa Sm., Trans. Ent. Soc. Lond. 1868, p.240(♀).

Myzine fastuosa D.T., Cat. Hym. viii. 123, 1897(♀).

Hab.—Champion Bay, W.A.

20. A. CLYPEATA Sm.

Dimorphoptera clypeata Sm., Trans. Ent. Soc. Lond. 1868, p. 240(♀).

Myzine clypeata D.T., Cat. Hym. viii. 122, 1897(♀).

Hab.—Champion Bay, W.A.

The second recurrent nervure is received close to the apex of the second cubital cell.

21. A. ARGENTEO-CINCTA Gribodo.

Cosila argenteo-cincta Gribodo, Ann. Mus. Civ. di Storia Nat. Genova, xviii. 261, 1883(♀).

I have not seen this species, which seems to differ from *A. anthracina* Sm., in the neuration, also by the presence of a tubercle at the base of the first ventral segment of the abdomen, and the sparser puncturation of the whole insect. Length 15 mm.

Hab.—Australia.

Described by Gribodo from a specimen in his own collection.